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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,288	08/04/2006	Tsutomu Shinohara	060540	8677

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EXAMINER	
TIETJEN, MARINA ANNETTE	
ART UNIT	PAPER NUMBER
3753	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,288	SHINOHARA ET AL.	
	Examiner	Art Unit	
	MARINA TIETJEN	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is responsive to the amendment filed on 03/25/2009. As directed by the amendment: claim 1 has been amended and claims 2 and 4 have been cancelled. Thus, claims 1 and 3 are presently pending in this application.

Response to Arguments

2. Applicant's arguments filed 03/25/2009 have been fully considered but they are not persuasive.

Regarding the argument that Takashi et al. (JP 07-019369) has a separate component (53) to adjust the spring receiver whereas the present invention has the operating shaft directly threadedly engaged to the spring receiver, claim 1 as currently amended does not claim a direct threaded engagement, but just a threaded portion formed at the upper end of the operating shaft, which the Examiner maintains Takashi's component (53a) is a threaded portion formed at the upper end of the operating shaft.

Furthermore, for clarification, the Examiner has included component (53) as being part of the Takashi's stem in the rejection below since it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the component (53) and the stem one piece for the purpose of reducing the number of parts and facilitating assembly, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

The instant Office Action has been made Final.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. (JP 07-019369)in view of Itoi et al. (U.S. Pat. No. 5,556,072).

Takashi et al. disclose a controller (fig. 1) comprising:

a casing (17, 22, 31) fixed to an upper part of a main body (11);

a valve rod (lower part of 14) arranged projecting downward from the casing (17, 22, 31) and moving up and down in a reciprocating manner;

an operating shaft (upper part of 14, 53) arranged in the casing (17, 22, 31);

a biasing means (20) for biasing the operating shaft (upper part of 14, 53) downward; and

a pressure chamber (33), formed between a piston (25) arranged on the operating shaft (upper part of 14, 53) and a partition plate (see labeled fig. 1 below) arranged below the piston (25) and fixed to the casing (17, 22, 31), for moving the operating shaft (upper part of 14, 53) upward when an operation gas is introduced, wherein the controller further comprises a slow start means (40) for slowly moving the valve rod (lower part of 14) upward,

the slow start means (40) including:

the piston (25) having an outer diameter smaller than an inner diameter of the casing (portion 31 of casing) and movable in up and down direction with respect to the operating shaft (upper part of 14, 53);

a pressure spring (30), arranged between a spring receiver (58) arranged at an upper part of the operating shaft (upper part of 14, 53) and the piston (25), for applying an elastic force corresponding to an amount of up and down movement of the piston (25) on the spring receiver (58) and the piston (25);

a diaphragm (24), arranged between an outer peripheral edge of the piston (25) and the upper casing (31), for partitioning the pressure chamber (33) and a space on an upper side of the piston (25);

an operation gas introducing chamber (see labeled fig. 1 below) arranged below the partition plate (see labeled fig. 1 below);

a constantly opened communication passage (36, dashed lines), formed in the partition plate (labeled fig. 1 below), for communicating the pressure chamber (33) and the operation gas introducing chamber (labeled fig. 1 below);

a flow adjusting valve (41) for adjusting a flow of the operation gas introduced into the constantly opened communication passage (36);

an auxiliary communication passage (43 better shown in fig. 2), formed in the partition plate (labeled fig. 1 below), for communicating the pressure chamber (33) and the operation gas introducing chamber (labeled fig. 1 below); and

an open-close valve (45), arranged in the auxiliary communication passage (43), for opening the auxiliary communication passage (43) when the piston (25) is at the lower most position and for closing the auxiliary communication passage (43) when the piston is raised from the lower most position by a predetermined distance and has reached an auxiliary communication shut off position; and

wherein a male threaded portion (53a) is formed at an upper end of the operating shaft (upper part of 14, 53), a female threaded portion (58d) for screw fitting to the male threaded portion (53a) is formed at an inner periphery of the spring receiver (58), the spring receiver (58) being screw fit to the operating shaft (upper part of 14, 53), supported to the casing (17, 22, 31) in a non-rotatable and up and down movable manner, the elastic force of the pressure spring (30) is made adjustable by the spring receiver (58) moving up and down when the operating shaft (upper part of 14, 53) is rotated.

However, Takashi et al. fail to disclose the operating shaft is movable in a freely up and down manner or a power transmitting means for amplifying a force applied on the operating shaft and transmitting to the valve rod.

Itoi et al. teach a controller (fig. 1) with a power transmitting means (41, fig. 1) including:

an operating shaft (21) freely movable in an up and down manner;

a first conical roller receiving member (26) extending perpendicularly downward from a lower end of an operating shaft (21);

a second roller receiving means (19) arranged at an upper end of a valve rod (2);

a pair of roller supporting bodies (43) arranged symmetrically with respect to an axis of the first roller receiving member (26) between both roller receiving members (26, 19);

a pair of rolling rollers (46) supported at an upper part of each roller supporting body (43) in a freely rotating manner and contacted to a tapered surface of the first roller receiving member (26); and

a pair of presser rollers (45) supported at a lower part of each roller supporting body (43) in a freely rotating manner and contacted to an upward roller receiving surface (19a) of the second roller receiving member (19), wherein each roller supporting body (43) is supported at a casing (61) so as to move pivotally with an axis shifted towards the axis of the first roller receiving member (26) with respect to the axis of the presser roller (45)

for the purpose of providing amplification means in a controller wherein the fluid channel closing force can be increased, as required, without increasing pneumatic pressure, elastic force, or drive force, and which is therefore usable for high- pressure fluids with leakage of the fluid prevented reliably (col. 1, lines 38-43).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Takashi's controller such that the operating shaft is movable in a freely up and down manner, wherein the operating shaft is part of a power transmitting means, as taught by Itoi et al., for the purpose of providing amplification means in a controller wherein the fluid channel closing force can be increased, as

required, without increasing pneumatic pressure, elastic force, or drive force, and which is therefore usable for high-pressure fluids with leakage of the fluid prevented reliably.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. (JP 07-019369)in view of Itoi et al. (U.S. Pat. No. 5,556,072) as applied to claims 1 and 2 above, and further in view of Kolenc (U.S. Pat. No. 5,215,286).

Takashi et al. as modified above, disclose a controller (fig. 1) comprising:

a casing (17, 22, 31) fixed to an upper part of a main body (11);

a valve rod (lower part of 14) arranged projecting downward to the casing (17, 22, 31) and moving up and down in a reciprocating manner;

an operating shaft (upper part of 14, 53) arranged in the casing (17, 22, 31) freely movable in an up and down manner;

a biasing means (20) for biasing the operating shaft (upper part of 14, 53) downward; and

a pressure chamber (33), formed between a piston (25) arranged on the operating shaft (upper part of 14, 53) and a partition plate (see labeled fig. 1 below) arranged below the piston (25) and fixed to the casing (17, 22, 31), for moving the operating shaft (upper part of 14, 53) upward when an operation gas is introduced, wherein the controller further comprises a slow start means (40) for slowly moving the valve rod (lower part of 14) upward,

the slow start means (40) including:

the piston (25) having an outer diameter smaller than an inner diameter of the casing (portion 31 of casing) and movable in up and down direction with respect to the operating shaft (upper part of 14, 53);

a pressure spring (30), arranged between a spring receiver (58) arranged at an upper part of the operating shaft (upper part of 14, 53) and the piston (25), for applying an elastic force corresponding to an amount of up and down movement of the piston (25) on the spring receiver (58) and the piston (25);

a diaphragm (24), arranged between an outer peripheral edge of the piston (25) and the upper casing (31), for partitioning the pressure chamber (33) and a space on an upper side of the piston (25);

an operation gas introducing chamber (see labeled fig. 1 below) arranged below the partition plate (see labeled fig. 1 below);

a constantly opened communication passage (36, dashed lines), formed in the partition plate (labeled fig. 1 below), for communicating the pressure chamber (33) and the operation gas introducing chamber (labeled fig. 1 below);

a flow adjusting valve (41) for adjusting a flow of the operation gas introduced into the constantly opened communication passage (36);

an auxiliary communication passage (43 better shown in fig. 2), formed in the partition plate (labeled fig. 1 below), for communicating the pressure chamber (33) and the operation gas introducing chamber (labeled fig. 1 below); and

an open-close valve (45), arranged in the auxiliary communication passage (43), for opening the communication passage (43) when the piston (25)

is at the lower most position and closing the communication passage (43) when raised from a position by a predetermined distance and reaching an auxiliary communication shut off position;

a power transmitting means including:

a first conical roller receiving member extending perpendicularly downward from a lower end of the operating shaft;

a second roller receiving means arranged at an upper end of the valve rod;

a pair of roller supporting bodies arranged symmetrically with respect to an axis of the first roller receiving member between both roller receiving members;

a pair of rolling rollers supported at an upper part of each roller supporting body in a freely rotating manner and contacted to a tapered surface of the first roller receiving member; and

a pair of presser rollers supported at a lower part of each roller supporting body in a freely rotating manner and contacted to an upward roller receiving surface of the second roller receiving member, wherein each roller supporting body is supported at the casing so as to move pivotally with an axis shifted towards the axis of the first roller receiving member with respect to the axis of the presser roller.

However, Takashi et al., as modified above, does not disclose the biasing means for biasing the operating shaft downward is a double winded compression coil spring.

Kolenc teaches using double springs 100, 112 (fig. 1) in a manner known in the art which yields no unpredictable results for providing a relatively heavy bias on an operating shaft (78) and power transmitting means (116) of a controller used under high pressure conditions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the controller of Takashi et al. taken with Itoi et al. such that the biasing spring is a double winded spring (or the equivalent in double springs), as taught by Kolenc, for the purpose of providing a relatively heavy bias on an operating shaft (78) and power transmitting means (116) of a high pressure operating controller in a manner known in the art and which yields no unpredictable results.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARINA TIETJEN whose telephone number is (571) 270-5422. The examiner can normally be reached on Mon-Thurs, 9:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBIN EVANS can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T./
Examiner, Art Unit 3753

/John K. Fristoe Jr./
Primary Examiner, Art Unit 3753